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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,791	10/01/2001	David A. Fulton	07445.0015-00000	3449

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EXAMINER

SMITH, TYRONE W

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/965,791

Applicant(s)

FULTON ET AL.

Examiner

Tyrone W Smith

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AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-41 is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1/20/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 6, 7-9, 11, 14, 15 and 17 rejected under 35 U.S.C. 102(b) as being anticipated by Xue et al (5622148).

Regarding Claims 1, 6, 8 and 14. Xue discloses a control method for a motor vehicle cranking system, which includes a power source (Figures 1, 3 and 5 item 104) providing a first voltage, a device/motor (Figures 1, 3 and 5 item 102) that operates at a second voltage that is lower than the first voltage (column 9 lines 5-8 and Figure 4) and an actuator (Figure 1, 3 and 5 item 103) for actuating the device. Further, a control circuit (Figure 5 item 106) with a contactor or DC chopper type device (Figure 5 item 120) for 1) receiving the first voltage from the power source, 2) controlling the operation of the actuator using the first voltage, 3) producing the second voltage, 4) providing the second voltage to the device in response to the operation of the actuator and 5) inhibits the first voltage from being provided in response to the switch (Figure 5 item 105) opening. Refer to column 3 lines 33-67 and column 4 lines 1-67.

Regarding Claims 2, 9 and 15. The device is a dc motor (Figures 1, 3 and 5 item 102) for cranking an engine and the actuator (Figure 1, 3 and 5 item 103) is a solenoid and wherein the providing of the second voltage is stopped after the engine is cranked.

Regarding Claim 7. The operation of the actuator is controlled by solid-state relays (Figure 5 item 120, 122 and 124).

Regarding Claims 11 and 17. Inhibiting the first voltage is performed in response to a switch (Figure 5 item 105) opening.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-5, 10-13, 16, 18 and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Xue et al (5622148) in view of King (4862009).

Regarding Claims 4, 10 and 16. Xue discloses a control method for a motor vehicle cranking system, which includes a power source (Figures 1, 3 and 5 item 104) providing a first voltage, a device/motor (Figures 1, 3 and 5 item 102) that operates at a second voltage that is lower than the first voltage (column 9 lines 5-8 and Figure 4) and an actuator (Figure 1, 3 and 5 item 103) for actuating the device. Further, a control circuit (Figure 5 item 106) with a contactor or DC chopper type device (Figure 5 item 120) for 1) receiving the first voltage from the power source, 2) controlling the operation of the actuator using the first voltage, 3) producing the second voltage, 4) providing the second voltage to the device in response to the operation of the actuator and 5) inhibits the first voltage from being provided in response to the switch (Figure 5 item 105) opening. Refer to column 3 lines 33-67 and column 4 lines 1-67. However,

Xue does not disclose the control circuit produces and provides a pulse width modulated second voltage.

King discloses a system for engine starting which includes a control circuit (Figure 3 items 76 and 78. Note that 76 and 78 can encompass a controller as describe in the current invention, also refer to Figure 4), which produces and provides a pulse width modulated second voltage. Refer to column 5 lines 17-68.

It would have been obvious to one of ordinary skill in the art at the time of invention to use Xue's control method for a motor vehicle cranking system with King's a system for engine starting. The advantage of combining the two would provide a system for engine cranking/starting and for providing electrical power during engine operation.

Regarding Claims 3, 5, 12, 13, 18 and 19. Xue discloses the claimed invention except for the power at 110V, device rated at 64V and a first voltage at 50V. It would have been obvious to one having ordinary skill in the at the time of invention was made to have the power supply and motor rated at any voltage level, since it has been held that the provision of adjustability, where needed, involve routine skill in the art, thus the invention can provide a battery or similar at any voltage level and have a motor rated at any level. *In re Stevens*, 101 USPQ 284 (CCPA 1954).

It would have been obvious to one of ordinary skill in the art at the time of invention to use Xue's control method for a motor vehicle cranking system with King's a system for engine starting. The advantage of combining the two would provide a system for engine cranking/starting and for providing electrical power during engine operation.

Allowable Subject Matter

5. Claims 20-41 in condition for allowance.

The following is a statement of reasons for the indication of allowable subject matter:
The prior art(s) of record does not disclose the activation of the third relay deactivates the second relay, and wherein the first relay is deactivated by the switch opening, the deactivation of the first and second relays causing the dc chopper module to deactivate, thereby stopping the second voltage from being output.

Response to Arguments

6. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent art is discloses in the PTO-892, which relates to starter motor or similar.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tyrone W Smith whose telephone number is 571-272-2075.

The examiner can normally be reached on weekdays from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on 571-272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tyrone Smith
Patent Examiner

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A handwritten signature in black ink, appearing to read 'DM' followed by a stylized flourish.

DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800